8EHQ-1196-13795

M. Alfred Wiedow, Ph.D., D.A.B.T.
Director of Toxicology, Risk Assessment, and Product Stewardship
Environment, Health & Safety

Telephone: (914) 785-2438
Fax: (914) 785-4074

RECEIVED
OPPT CBIC
96 NOV -5 PM 3:09

Ciba-Geigy Corporation
520 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591-9005
Telephone 914 785 2000

October 28, 1996

Document Processing Center (7407)
(Attn.: Section 8(e) Coordinator)
Office of Pollution Prevention and Toxics
U. S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

MAIL
RETURN RECEIPT REQUESTED

Contains No CBI

96 NOV 8 AM 9:53
RECEIVED
OPPT NCIC

RE.: **TSCA Section 8(e) Notice: Araldite CY 179 and Araldite CY 184; Preliminary Information on Mechanistic Studies**

Dear Section 8(e) Coordinator:

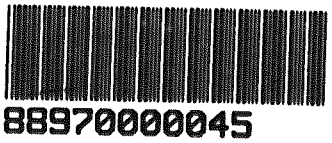
Ciba Polymers[1] claims no information in this letter as Confidential Business Information.

In accordance with EPA's March 16, 1978, policy statement on Section 8(e) reporting under the Toxic Substances Control Act and EPA's June 1991 TSCA Section 8(e) Reporting Guide, Ciba Polymers wishes to bring to your attention **preliminary information** on mechanistic studies carried out by its parent company in Basel, Switzerland, in connection with the products, Araldite CY 179 and Araldite CY 184 polymers. Araldite 179 is 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexane carboxylate (CAS Registry No. 2386-87-0). Araldite CY 184 is 1,2-cyclohexanedicarboxylic acid, bis(oxyranylmethyl) ester (CAS Registry No. 5493-45-8). Both products are low viscosity liquid cycloaliphatic epoxy resins. They are used in major electrical insulating applications for businesses.

In 1989, Ciba Polymers' parent corporation in Basel Switzerland recommended to its customers that mixtures of cycloaliphatic epoxy resin Araldite CY 179 with Bisphenol A epoxy resins should be handled with particular care because they may present a carcinogenic hazard. This was based on the results of a two-year skin painting study on mice with a mixture of bis(2,3-epoxycyclo-pentenyl)ether (not a Ciba product) and a liquid Bisphenol A epoxy resin, which gave evidence of a carcinogenic effect, whereas the individual components did not show this effect. [Bently, Beieri, Kuster, et. al., *Carcinogenesis* 10: 321-327(1989)].

Special studies were subsequently carried out by Ciba in Basel to clarify the mechanism of this synergistic interaction. The results indicated that the epoxy groups of Bisphenol A epoxy resin were rapidly hydrolyzed in the skin. This enzymatic hydrolysis however was inhibited by the presence of the cycloaliphatic epoxide compound, such that glycidaldehyde, a known skin carcinogen, was produced.

[1] Formerly a division of Ciba-Geigy Corporation and now a division of a corp Chemicals Corporation.



The question arose whether Araldite CY 179, a cycloaliphatic epoxide compound as well, would also inhibit the enzymatic hydrolysis of Bisphenol A epoxide resins. Investigations showed that this was indeed the case. These findings suggested that mixtures of Araldite CY 179 and Bisphenol A epoxide resins may present a carcinogenic hazard.

Since then, Ciba Polymers' parent corporation has conducted further studies to investigate this potentiation. Results have shown that the cycloaliphatic-glycidylester, Araldite CY 184, also inhibits the enzymatic hydrolysis of epoxy resins. Therefore, Ciba Polymers' parent corporation considered that mixtures of Araldite CY 184 and Bisphenol A epoxy resins may present the same carcinogenic hazard as described previously for mixtures with Araldite CY 179.

The above information is all that the U. S. Ciba Polymers presently has with respect to the above findings. We do not yet have copies of the mechanistic studies described above. No skin painting tests have been conducted on these mixtures, only mechanistic hydrolysis studies. Therefore, we can only conclude that such mixtures of Ciba products **may** increase the likelihood of skin or liver cancer. Although there is no direct evidence of increased cancer formation with mixtures of Bisphenol A epoxy resins with either Araldite CY 179 or Araldite CY 184, we now have a higher concern regarding the possible increase in carcinogenic hazard when such chemical substances are mixed together.

In response to these findings, Ciba Polymers:

1. has modified the Material Safety Data Sheet of Araldite CY 184 to reflect these findings. (The MSDS of Araldite CY 179 was revised in 1989.)

2. will notify persons working with these compounds of the new findings in accordance with the notification requirements of OSHA's Hazard Communication Standard (29 CFR 1910.1200).

3. will submit copies of the mechanistic studies to EPA, after we receive them.

Please contact the undersigned if you require additional information.

Very truly yours,

M. Alfred Wiedow

M. Alfred Wiedow, Ph.D., D.A.B.T.

Ciba Specialty Chemicals Corporation

AW10146a.WPD/dch